Bush Terminal Company, Pier 5
(Bush Terminal, Pier 5)
Opposite the end of 41st Street
on Upper New York Bay
Brooklyn
Kings County
New York

HAER No. NY-201-B

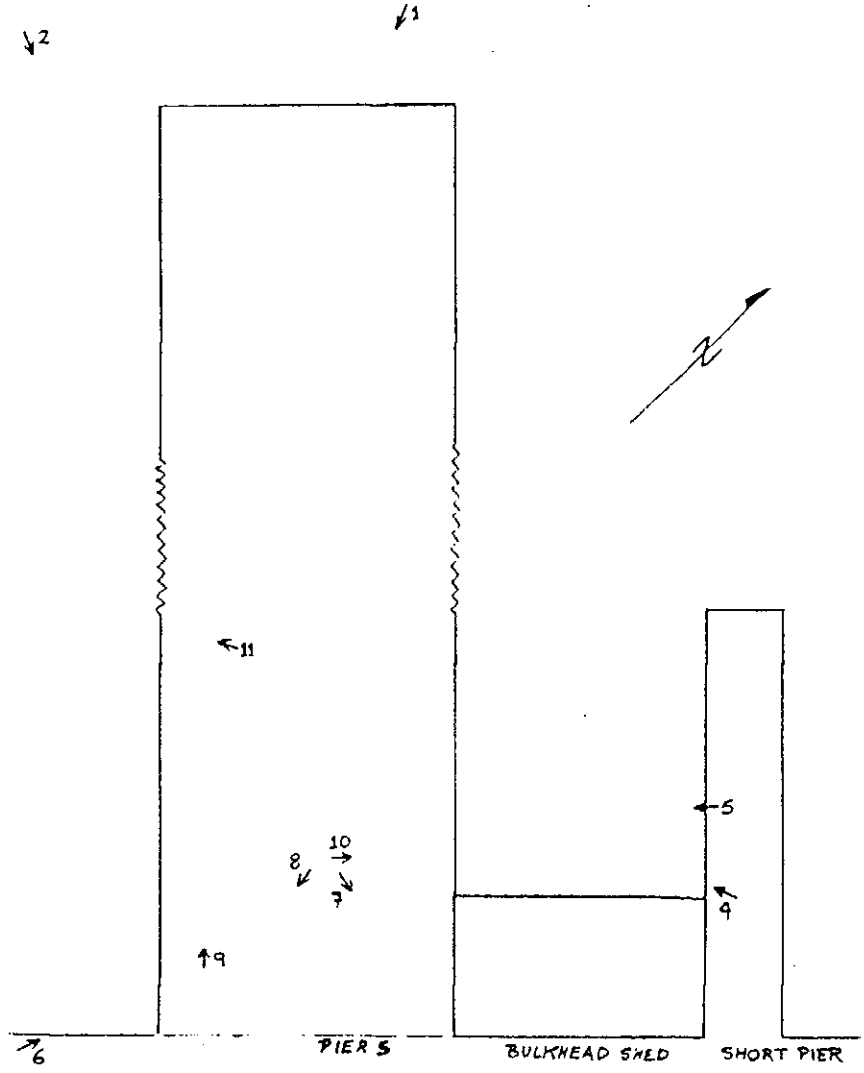
HAER
NY,
24-BROK,
54-B-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
Mid-Atlantic Region
National Park Service
U. S. Department of the Interior
Philadelphia, Pennsylvania 191056

KEY TO PHOTOGRAPHS



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HISTORIC AMERICAN ENGINEERING RECORD

Bush Terminal Company, Pier 5
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HAER No. NY-201-B

Location:	On Upper New York Bay, opposite the end of 44th Street Brooklyn, Kings County, New York UTM: 18.582940.4500800 Quad: Jersey City, New Jersey - New York
Dates of Construction:	1902-03 - Substructure built c. 1905 - Shed built c. 1925-27 - Modified
Engineer:	E. P. Goodrich, Chief Engineer, Bush Terminal Company
Contractors:	Piershed fabrication by the American Bridge Company, Philadelphia, PA, through subsidiaries Post & McCord (Brooklyn) and New Jersey Steel and Iron Company (Trenton)
Present Owner:	New York City Department of Ports and Trade Battery Maritime Building 1 Whitehall Street New York, NY 10004
Present Use:	Vacant; last used for cargo handing c. 1980
Significance:	Pier 5 was typical of the substructures and piersheds built by Irving Bush c. 1902-09, sheet-piling-retained fill. It survives partly intact, and retains the best evidence of late attempts to modify Bush Terminal piers for better use by trucks.
Project Information:	Bush Terminal is eligible for inclusion on the National Register of Historic Places. Pier 5 contributes to the significance of the terminal complex. As part of the New York Harbor Collection and Removal of Drift Project implemented by the Army Corps of Engineers, all pier components except the solid fill core will be removed. This documentation meets conditions for mitigating adverse effects to Pier 5 according to the terms of a Memorandum of Agreement among the Advisory Council on Historic Preservation, the New York State Historic Preservation Officer, and the New York District, Corps of Engineers. Further information on Bush Terminal appears in HAER No. NY-201. Project actions may occur as early as 1989.

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PART I. HISTORICAL INFORMATION

Irving T. Bush purchased the property including the site of Bush Terminal Pier 5 in 1902, built the pier substructure c. 1902-03, and had the existing piershed erected by c. 1905. Sometime after completion of the shed, his company leased Pier 5 to a series of shipping and stevedoring firms engaged in general cargo handling. Information on pier tenants is incomplete. Firms using Pier 5 included Lloyd Brasiliero and Baltic American Line, sharing the pier in the 1920s; Furness, Withey & Co. in the 1930s; snd United Port Service Company in the 1940s and 1960s. Bush Terminal Company operated the pier itself in the 1960s and 1970s, until c. 1978-80. A spectacular fire destroyed much of the shed in 1981 (Army Corps of Engineers 1926, 1932, 1942, 1953, 1965, 1978; Towline 1982).

PART II. DESCRIPTIVE INFORMATION

A. 1988 Conditions

A series of large and small fires, beginning in 1981, destroyed most of the shed on Pier 5, but the east end retains about three hundred feet of partly intact shed, with standing columns, trusses, roof sections, and offices. The rest of the piershed is essentially a twisted metal sculpture. A chain link fence blocks landward access to the pier. Despite these indignities, the east end of the Pier 5 has the distinctive shed sides, cargo doors, and Bush Terminal colors which once highlighted the South Brooklyn waterfront.

B. Original Construction, c. 1902-1905

The 1902-03 substructure is about 150 feet wide, 1,315 feet long on the north side, and 1,306 feet long on the south side, with the outer end adjusted to the federal pierhead line. As with Bush Terminal piers 1-4, vertical timber sheet piling, with some later concrete additions, retains solid fill as an

approximately 80-foot-wide core through the longitudinal pier center, with 35-foot-wide pile-supported timber decks on either side of the fill. Tie rods join the two walls of sheeting, which also have exterior rip-rap reinforcement. The fill consists of stratified sand and gravel dredged from the shallow bottoms to allow for deepwater vessel access. Transverse pile rows under the decks occur at about 6-foot intervals. Details of the extreme outshore substructure beyond the piershed are unknown, but this section probably had denser pile arrays and thicker fender protection against vessel impacts. The pier deck pitched down between two and three degrees from the longitudinal center, and was finished at about 10 feet above mean low water. Except for a 40-foot-wide strip in the longitudinal pier center, the original deck consisted of two layers of 3-inch-thick timber, laid at 45 degree angles and resting on solid fill or on pile-supported underdecks. The center of the deck was a single layer of 3-inch-thick timber on fill. Two railroad tracks from the terminal ran along the north side and center of the pier, entering on the north half of the east or inshore pier end (Figure 2; Army Corps of Engineers 1926, 1932, 1942, 1953; Sprigg 1963; Dravo Van houten, Inc., 1984).

The piershed, completed c. 1905, was 1,290 feet long and 143.3 feet wide, leaving narrow aprons on the long sides of the pier. In structural details and original fenestration, it was identical to the shed completed slightly earlier for Pier 7 (see HAER NO. NY-201-A). Minor differences with Pier 7 included an unstaggered longitudinal array of skylights, and the fact that virtually all of the manually-lifted cargo doors were originally 23 feet long. There is no information on original offices, but the closed window(s) and absence of a vehicular door in the east facade south bay suggest offices were located behind this section of facade. Undocumented, probably frame partitions divided the interior into several large sections when multiple tenants used the pier. A 30-foot-square frame gear room, formerly on the south wall 600 feet from the east end, may have dated to original construction. Water and electrical service were identical to Pier 7. There was evidently no sprinkler system in the original Pier 5 shed (Army Corps of Engineers 1926, 1932; Sanborn Map Company 1928; Department of Ports and Trade n.d.) [see HAER Photographs No. NY-201-B-1, NY-201-B-3, NY-201-B-4, NY-201-B-5, NY-201-B-7, NY-201-B-10 and NY-201-B-12].

C. Modifications after c. 1925

By 1932, Bush Terminal Company installed a sprinkler system on Pier 5, similar to the one described for Pier 7 (see HAER NO. NY-201-A). Between c. 1932 and 1942, the company replaced 858 feet of timber deck along the inshore longitudinal pier center with an 8-inch-thick, 40-foot-wide concrete deck. As truck traffic became more important for freight movement after World War II, car tracks were removed from the Bush Terminal piers. Most of the Pier 5 track was removed by c. 1953; between c. 1983 and 1965, all remaining rack was removed and the concrete deck apparently extended the full length of the pier.

To add truck-oriented cargo storage and handling facilities to the Short Pier north of Pier 5, the company built a pile-supported, timber-decked, one-story bulkhead shed at the end of the slip between the two piers in 1960-61. This steel-framed structure, about 117 by 75 feet with metal siding and a corrugated-metal double-gabled roof, was apparently not initially designed to communicate directly with Pier 5, although the metal framing and siding were angled to meet the slope of the Pier 5 shed (Army Corps of Engineers 1926, 1932, 1942, 1953, 1965; Sprigg 1963; Department of Ports and Trade n.d.) [see HAER Photographs No. NY-201-B-1 and NY-201-B-11]

In 1966 and 1967, the company--by then operating Pier 5 itself--made the most extensive alterations to Pier 5 in a final effort to maximize use by trucks. This program included a ramped concrete loading platform, accessible from the bulkhead shed, a new two-story block of offices near the southeast corner of the shed, two large steel roll-up doors in the east facade (17 by 33.6 and 17 by 44 feet), four 17.5-by-26-foot steel roll-up doors along the south side, removal of the gear room on the south side, new bulkhead shed doors. The platform allowed for direct handtruck or forklift operation between tractor trailers and pier or bulkhead decks; the new south side doors allowed for operations between trailers and vessels. Figure 3 shows locations of the platform, offices, and east facade doors; the doors on the south side were centered 255, 465, 855, and 1,065 feet from the east shed wall. The 4.5-foot-high, 21.5-foot-wide platform, requiring additional piles under the pile-supported section of pier deck, has earth fill retained by 6- and 12-inch-thick walls and apparently communicated with the bulkhead shed by way of a shortened Pier 5 cargo door, now removed. Installation of the east facade steel roll-up doors required removal of wood framing, siding, and doors. Each new south side door was set about 16.5 feet from the edge of the shed, and framed with two ne pile-supported steel columns with a corrugated metal petition rising from the door head to the roof. This arrangement, centered on a transverse roof truss and a shed side column, required removal of the column and part of the truss, creating an open loading area on the pier deck outside the new door (Downes 1966 [plans]) [see HAER Photographs No. NY-201-B-7 and NY-201-B-11].

The 1966-67 office block is 35 by 73 feet, with a flat roof about 18.5 feet above the original pier deck. Additional concrete pedestals in pier fills, and yellow pine stringers fastened to earlier horizontal pile bracing, support an approximately 6-inch-thick concrete base above which the wood framed structure rises. Original piershed siding or cargo doors was removed to expose the south office block wall. The wood-sided office exterior has dark green paint below the first floor windows, and blue-green paint above. The office interior, with a two-story central-corridor plan, is finished with linoleum or tile floors, and gypsum board walls and ceilings. A separate sprinkler system was installed to serve the offices. The east office walls abuts an older 9-foot-high, cinder-block-enclosed toilet with a wood ceiling, set in the southeast corner

of the pier shed. The undated toilet probably replaced some original office components. Additions in 1966-67 also included a brick-framed, 3-by-7-foot pedestrian door north of the toilet, in the south bay of the east shed facade (Figure 3; Downes 1966 [plans]; Department of Ports and Trade, n.d.) [see HAER Photographs No. NY-201-B-3, NY-201-B-6, NY-201-B-8, and NY-201-B-9].

PART III. SOURCES OF INFORMATION

Plans and Drawings

One original drawing of Bush Terminal Pier 5 survives at the New York City Department of Ports and Trade, which is the only known repository of such material. This drawing is reproduced as HAER Photograph No. NY-201-B-12:

American Bridge Company
1902 44th Street Pier - S. Brooklyn - N.Y./Water Front Improvements for the Bush Company, Ltd/Erection Diagram. Order No. A1343, Sheet No. 5. Drawing No. 1431. On file, Department of Ports and Trade, City of New York, Battery Maritime Building, 1 Whitehall Street, New York, NY 10004.

Later plans pertinent to Pier 5 refer primarily to modifications:

Department of Marine and Aviation, City of New York
1947 Sprinkler Lines/Bush Terminal/Brooklyn, N.Y. Drawing 4734, dated October 2, 1947. Original source of drawing uncertain. On file, Department of Ports and Trade, City of New York, Battery Maritime Building, 1 Whitehall Street, New York, NY 1004.

Department of Ports and Trade, City of New York
n.d. Permit files, c. 1928-present with indices, include plans of repairs or modifications planned by the Bush Terminal Company. Permits of interest for this documentation include 2253A [currently missing] for possible 1948 installation of trenches for firefighting purposes; 4839A and 4948A for original 1960-61 construction of the bulkhead shed south of Pier 5; 5936A for most of the 1966-67 alterations (see Downes 1966 below); 5974A for the sprinklers in the 1966-67 offices, and 6035A for 1967 removal of the gear room on the south side of the pier. On file at department offices, Battery Maritime Building, 1 Whitehall Street, New York, NY 10004.

Downes, Leslie J., Jr.
1966 A set of drawings prepared for Bush Terminal Company for Pier 5 alterations, filed as Permit 5936A at the Department of Ports and Trade, City of New York:

Drawings 6604-1, 6604-2	Cargo Shed Alterations/Pier 5/ North Side
Drawings 6604-3, 6604-4	New Pier Offices/Pier 5/Inshore End
Drawing 6604-5	New Cargo Doors/Pier 5/South Side
Drawings 6604-6, 6604-6A	Loading Platform-Entrance Doors/ Pier 5

Historic Views

No historic views focusing on Pier 5 have yet been located. For views of this pier in the context of the terminal, see HAER NO. NY-201.

Bibliography

Unpublished Sources:

Department of Docks and Ferries, City of New York
1902 Waterfront, City of New York. Atlas accompany Annual Report, 1902-03. On file, Department of Ports and Trade, City of New York, Battery Maritime Building, 1 Whitehall Street, New York, NY 10004.

Dravo Van Houten, Inc.
1984 General Design Memorandum, Phase II-Project Design, City of New York, Brooklyn Reach 2. New York Harbor Collection and Removal of Draft Project. Draft, on file New York District, Army Corps of Engineers.

Sprigg, C. C.
1963 Report of Survey for Determining Elevations of Deck of Pier No. 5, Bush Terminal, ft. 44th St., Brooklyn, N.Y. Mss., Cummorford Files, South Street Seaport Museum Library, New York, NY.

Published Sources:

Army Corps of Engineers
1926 The Port of New York, N.Y. and N.J. Port Series No. 5. Washington: Government Printing Office.

1932 As above, revised
1942 " "
1953 " "
1965 " "
1978 " "

Towline (Published by Moran Towing and Transportation Co.)
1982 "Harbor Tugs Save Barges, Fire Destroys Tie-Up Piers." Vol. 35: 8-9.

Figure 1. LOCATION OF PIER 5

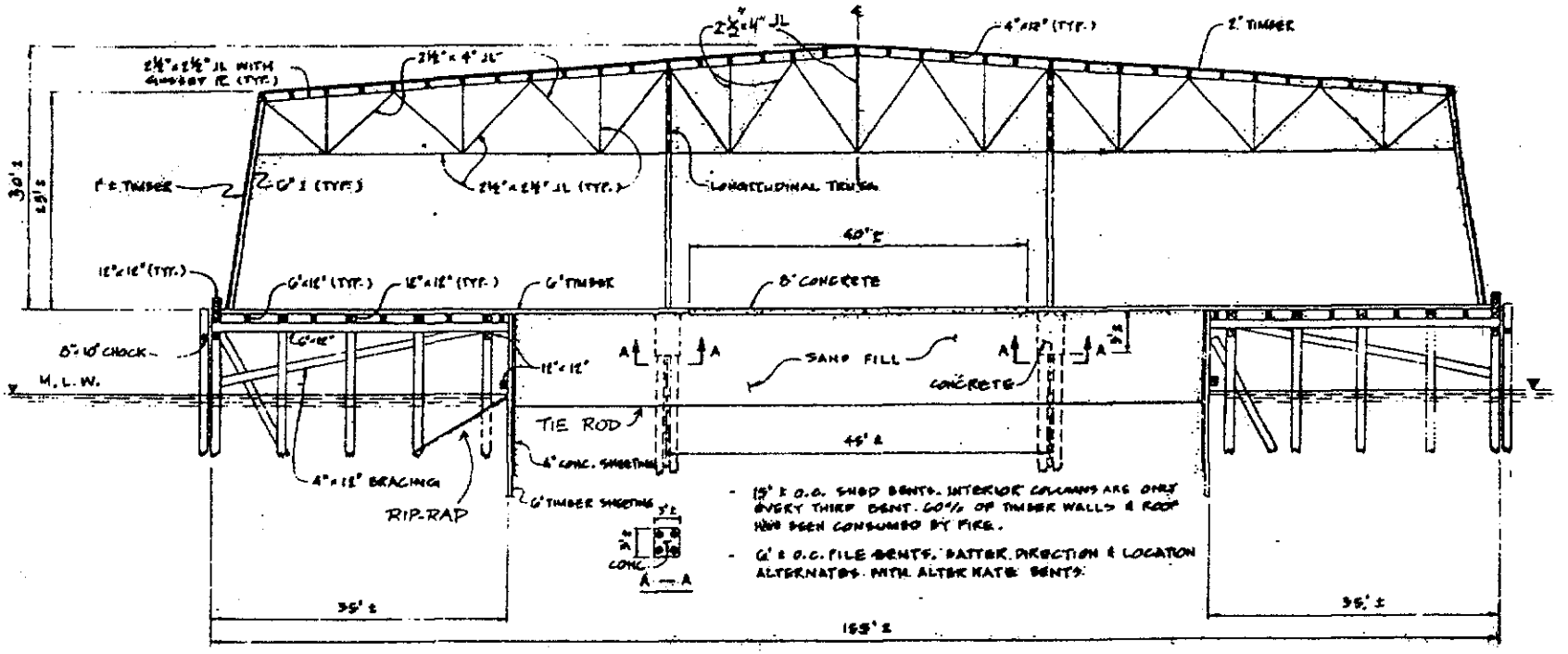

Figure 2. TYPICAL CROSS SECTION OF PIER 5
source: Dravo Van Houten 1984

BUSH TERMINAL COMPANY: PIER 5
(Bush Terminal; Pier 5)
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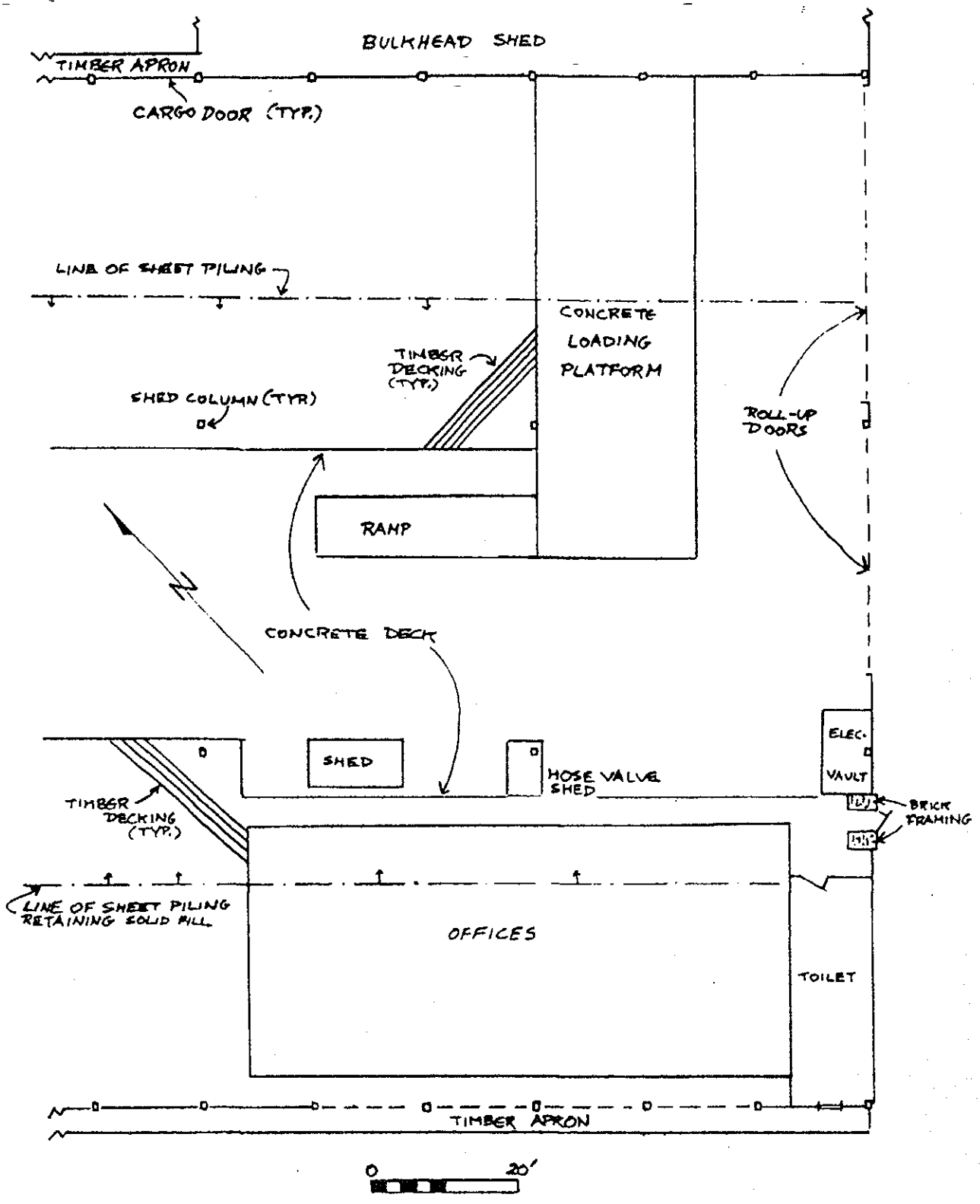

Figure 3. PLAN OF INSHORE END OF PIER 5, 1988